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6 **UNITED STATES DISTRICT COURT**  
7 **EASTERN DISTRICT OF WASHINGTON**  
8 **AT SPOKANE**

8 AMANDA BANTA, et al.,

9 Plaintiffs,

10 v.

11 ROBERT W. FERGUSON, Attorney  
General of the State of Washington,  
et al.,

12 Defendants.

NO. 2:23-cv-00112

DECLARATION OF  
LUCY P. ALLEN IN SUPPORT OF  
STATE DEFENDANTS'  
OPPOSITION TO MOTION FOR  
PRELIMINARY INJUNCTION

14 I, Lucy P. Allen, declare as follows:

15 **I. SCOPE OF ASSIGNMENT**

16 1. I am over the age of 18, competent to testify as to the matters herein,  
17 and make this declaration based on my personal knowledge.

18 2. I have been asked by the Office of the Attorney General of  
19 Washington to address the following issues: (a) the number of rounds of

ammunition fired by individuals using a gun in real-life self-defense incidents;<sup>1</sup> and (b) the outcomes when assault weapons and large-capacity magazines (magazines capable of holding more than 10 rounds) are used in public mass shootings, including the associated number of casualties.

## II. BACKGROUND AND QUALIFICATIONS

3. I am a Managing Director of NERA Economic Consulting (“NERA”), a member of NERA’s Securities and Finance Practice and Chair of NERA’s Product Liability and Mass Torts Practice. NERA provides practical economic advice related to highly complex business and legal issues arising from competition, regulation, public policy, strategy, finance, and litigation. NERA was established in 1961 and now employs approximately 500 people in more than 20 offices worldwide.

4. In my over 25 years at NERA, I have been engaged as an economic consultant or expert witness in numerous projects involving economics and statistics. I have been qualified as an expert and testified in court on various

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<sup>1</sup> I have also been asked to analyze the percent of incidents in which rifles were used in self-defense according to The Heritage Foundation’s “Defensive Gun Uses in the U.S.” database.

1 economic and statistical issues relating to the flow of guns into the criminal  
2 market. I have testified at trials in Federal and State Courts, before the New York  
3 City Council Public Safety Committee, the American Arbitration Association  
4 and the Judicial Arbitration Mediation Service, as well as in depositions.

5 5. I have an A.B. from Stanford University, an M.B.A. from Yale  
6 University, and M.A. and M. Phil. degrees in Economics, also from Yale  
7 University. Prior to joining NERA, I was an Economist for both President  
8 George H. W. Bush's and President Bill Clinton's Council of Economic  
9 Advisers. My resume with recent publications and testifying experience is  
10 included as Exhibit A.

### 11 III. SUMMARY OF FINDINGS

12 6. Regarding the number of rounds fired by individuals using a gun in  
13 self-defense, I analyzed almost 1,000 real-life incidents of self-defense and found  
14 that it is extremely rare for a person, when using a firearm in self-defense, to fire  
15 more than 10 rounds. In particular, I performed an analysis of 736 incidents in  
16 the NRA Armed Citizen database, as well as our own systematic analysis of 200  
17 Factiva news stories from a random sample of approximately 4,800 news stories  
18  
19

1 describing incidents of self-defense with a firearm and found only 2 incidents  
2 where more than 10 rounds were used.<sup>2</sup>

3 7. Regarding the outcomes when assault weapons and large-capacity  
4 magazines are used in public mass shootings, I analyzed almost 200 mass  
5 shootings from four different sources between 1982 and 2022 and found that:  
6 (1) assault weapons and large-capacity magazines are often used in mass  
7 shootings; (2) both injuries and fatalities were higher in mass shootings that  
8 involved assault weapons and/or large-capacity magazines than in other mass  
9 shootings; (3) it is common for offenders to fire more than 10 rounds when using  
10 an assault weapon or a large-capacity magazine in mass shootings; and (4) the  
11 majority of guns used in mass shootings were obtained legally. These findings  
12 are consistent with other studies that have analyzed mass shootings, including  
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16 <sup>2</sup> Note that these two incidents with more than 10 bullets fired by the  
17 defender were added to the NRA Armed Citizen database after an earlier analysis  
18 that I had conducted of the database in another case. In addition, according to the  
19 news stories on these two incidents, the defenders did not appear to need to fire  
more than 10 shots to defend themselves.

1 studies based on alternate sets of mass shootings, covering different years and  
2 defining mass shootings somewhat differently.

### 3 IV. OPINIONS

#### 4 A. Use of Guns in Self-Defense

##### 5 1. The Number of Rounds Used by Individuals In Self-Defense

6 8. Plaintiffs claim that the assault weapons<sup>3</sup> covered by Washington  
7 State’s Substitute House Bill (“SHB”) 1240, codified at 2023 Wash. Sess. Laws,  
8 ch. 162, are commonly used for lawful purposes, including for self-defense.<sup>4</sup>

9 9. The number of rounds commonly needed by individuals to defend  
10 themselves cannot be practically or ethically determined with controlled  
11 scientific experiments and there is no source that systematically tracks or  
12 maintains data on the number of rounds fired by individuals in self-defense. Due  
13 to these limitations, I have analyzed available data sources to estimate the number

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15 <sup>3</sup> Under SHB 1240, a firearm is classified as an assault weapon if it is one  
16 of the firearm types and models listed, or if it has certain features. Examples of  
17 assault weapons include “AR-180 type semiautomatic,” “AK-47 in all forms,”  
18 and “Bushmaster XM 15.” *See*, 2023 Wash. Sess. Laws, ch. 162, § 2.

19 <sup>4</sup> *See*, for example, Plaintiffs’ Motion for Preliminary Injunction, dated  
May 4, 2023 (“Motion”), ECF No. 16, pp. 14-15.

1 of rounds fired by individuals to defend themselves. In particular, I have analyzed  
2 data from the NRA Institute for Legislative Action, as well as my own study of  
3 news reports on incidents of self-defense with a firearm. In all, I have analyzed  
4 almost 1,000 incidents of self-defense with a firearm and found that it is  
5 extremely rare for a person, when using a firearm in self-defense, to fire more  
6 than 10 rounds.

7 10. The NRA maintains a database of “Armed Citizen” stories  
8 describing private citizens who have successfully defended themselves, or others,  
9 using a firearm (“NRA Armed Citizen database”). According to the NRA, the  
10 “Armed Citizen” stories “highlight accounts of law-abiding gun owners in  
11 America using their Second Amendment rights to defend self, home and  
12 family.”<sup>5</sup> Although the methodology used to compile the NRA Armed Citizen  
13 database of stories is not explicitly detailed by the NRA, the NRA Armed Citizen  
14 database is a useful data source in this matter for at least three reasons. First, the  
15 Armed Citizen database was the largest collection of accounts of citizen self-

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18 <sup>5</sup> NRA Institute for Legislative Action, Armed Citizens,  
19 <https://www.nraila.org/gun-laws/armed-citizen/>, accessed May 28, 2017.

1 defense compiled by others that I was able to find.<sup>6</sup> Second, the incidents listed  
 2 in the Armed Citizen database highlight the very conduct that Plaintiffs claim the  
 3 Washington State law impedes (*i.e.*, the use of firearms by law-abiding citizens  
 4 for self-defense).<sup>7</sup> Third, the Armed Citizen database is compiled by an entity  
 5 that actively opposes restrictions on magazine capacity and restrictions on the  
 6 possession and use of firearms in general.<sup>8</sup> In light of the positions taken by the  
 7 entity compiling the data, I would expect that any selection bias would be in favor  
 8 of stories that put use of guns in self-defense in the best possible light and might  
 9 highlight the apparent need of guns and/or multiple rounds in self-defense  
 10 incidents.

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13 <sup>6</sup> Note that in 2020, after the time my research was conducted, The  
 14 Heritage Foundation began an online database of its own sample of defensive  
 15 gun use incidents ([https://datavisualizations.heritage.org/firearms/defensive-](https://datavisualizations.heritage.org/firearms/defensive-gun-uses-in-the-us)  
 16 [gun-uses-in-the-us](https://datavisualizations.heritage.org/firearms/defensive-gun-uses-in-the-us)).

17 <sup>7</sup>See, for example, Motion, pp. 14–15.

18 <sup>8</sup>See, for example, NRA Civil Rights Defense Fund website,  
 19 <http://www.nradefensefund.org/current-litigation.aspx>, accessed October 12,  
 2018.

11. My team at NERA and I performed an analysis of incidents in the NRA Armed Citizen database that occurred between January 2011 and May 2017.<sup>9</sup> For each incident, the city/county, state, venue (whether the incident occurred on the street, in the home, or elsewhere) and the number of shots fired were tabulated.<sup>10</sup> The information was gathered for each incident from both the NRA synopsis and, where available, an additional news story. An additional news story was found for over 95% of the incidents in the NRA Armed Citizen database.

12. According to this analysis of incidents in the NRA Armed Citizen

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<sup>9</sup> My collection and coding of the NRA Armed Citizen stories was last performed in mid-2017.

<sup>10</sup> The following incidents were excluded from the analysis: (1) duplicate incidents, (2) wild animal attacks, and (3) one incident where the supposed victim later pleaded guilty to covering up a murder. When the exact number of shots fired was not specified, we used the average for the most relevant incidents with known number of shots. For example, if the story stated that “shots were fired” this would indicate that at least two shots were fired and thus we used the average number of shots fired in all incidents in which two or more shots were fired and the number of shots was specified.



1 database, it is extremely rare for a person, when using firearms in self-defense,  
 2 to fire more than 10 rounds. Out of 736 incidents, there were 2 incidents (0.3%  
 3 of all incidents), in which the defender was reported to have fired more than 10  
 4 bullets.<sup>11</sup> Defenders fired 2.2 shots on average.<sup>12</sup> In 18.2% of incidents, the  
 5 defender did not fire any shots. These incidents highlight the fact that in many  
 6 instances defenders are able to defend themselves without firing any shots. For  
 7 example, according to one of the incidents in the NRA Armed Citizen Database:

8 “A man entered a Shell station in New Orleans, La. and attempted to rob a  
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10  
 11 <sup>11</sup> Note that these two incidents with more than 10 bullets fired by the  
 12 defender were added to the NRA Armed Citizen database in 2016 and 2017 after  
 13 an earlier analysis that I had conducted of the database had been submitted to and  
 14 cited by the Court in *Kolbe v. O'Malley*. ECF No. 79, 42 F. Supp. 3d 768 (D. Md.  
 15 Aug. 12, 2014). In addition, according to the news stories on these two incidents,  
 16 the defenders did not appear to need to fire more than 10 shots to defend  
 17 themselves.

18 <sup>12</sup> Note that the analysis is focused on shots fired when using a gun in self-  
 19 defense and therefore the average includes instances when no shots are fired. If  
 one calculates the average excluding incidents of self-defense with a gun without  
 firing shots, the average is still low, 2.6 shots when at least one shot is fired.

1 cashier, by claiming he was carrying a gun. The cashier responded by  
 2 retrieving a gun and leveling it at the thief, prompting the criminal to flee.  
 3 (The Times Picayune, New Orleans, La. 09/02/15)”<sup>13</sup>

4 13. For incidents occurring in the home (56% of total), defenders fired  
 5 an average of 2.1 shots, and fired no shots in 16.1% of incidents. For incidents  
 6 occurring outside the home (44%) of total, defenders fired an average of 2.2  
 7 shots, and fired no shots in 20.9% of incidents.<sup>14</sup> The following table summarizes  
 8 these findings:

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12 <sup>13</sup> “Gas station clerk scares off robber,” NRA ILA Armed Citizen,  
 13 September 9, 2015.

14 <sup>14</sup> A separate study of incidents in the NRA Armed Citizen database for an  
 15 earlier period (the five-year period from 1997 through 2001) found similar  
 16 results. Specifically, this study found that, on average, 2.2 shots were fired by  
 17 defenders and that in 28% of incidents of armed citizens defending themselves  
 18 the individuals fired no shots at all. *See* Claude Werner, “The Armed Citizen – A  
 19 Five Year Analysis,” <https://tacticalprofessor.files.wordpress.com/2014/12/tac-5-year-w-tables.pdf>, accessed January 26, 2023.

**Number of Shots Fired in Self-Defense  
Based on NRA Armed Citizen Incidents in the United States  
January 2011 - May 2017**

	<b>Shots Fired by Individual in Self-Defense</b>		
	<b>Overall</b>	<b>Incidents in Home</b>	<b>Outside the Home</b>
Average Number of Shots Fired	2.2	2.1	2.2
Number of Incidents with No Shots Fired	134	66	68
Percent of Incidents with No Shots Fired	18.2%	16.1%	20.9%
Number of Incidents with >10 Shots Fired	2	2	0
Percent of Incidents with >10 Shots Fired	0.3%	0.5%	0.0%

**Notes and Sources:**

Data from NRA Armed Citizen database covering 736 incidents (of which 411 were in the home) from January 2011 through May 2017. Excludes duplicate incidents, wild animal attacks and one incident where the supposed victim later pleaded guilty to covering up a murder.

14. We also performed the same analysis of the NRA Armed Citizen database limited to incidents that occurred in Washington State. According to this analysis, defenders in Washington State fired 2.1 shots on average. Out of 23 incidents, there were no incidents in which the defender was reported to have fired more than 10 bullets. In 13% of incidents, the defender did not fire any shots, and simply threatened the offender with a gun. For incidents occurring in the home (70% of total), defenders fired an average of 2.1 shots, and fired no shots in 12.5% of incidents. For incidents occurring outside the home (30% of

total), defenders fired an average of 1.9 shots and fired no shots in 14.3% of incidents. The following table summarizes these findings for Washington State:

**Number of Shots Fired in Self-Defense  
Based on NRA Armed Citizen Incidents in Washington State  
January 2011 - May 2017**

	Shots Fired by Individual in Self-Defense		
	Overall	Incidents in Home	Outside the Home
Average Number of Shots Fired	2.1	2.1	1.9
Number of Incidents with No Shots Fired	3	2	1
Percent of Incidents with No Shots Fired	13.0%	12.5%	14.3%
Number of Incidents with >10 Shots Fired	0	0	0
Percent of Incidents with >10 Shots Fired	0.0%	0.0%	0.0%

**Notes and Sources:**

Data from NRA Armed Citizen database covering 23 incidents in Washington (of which 16 were in the home) from January 2011 through May 2017. Excludes duplicate incidents and wild animal attacks.

15. In addition to our analysis of incidents in the NRA Armed Citizen database, we performed a systematic, scientific study of news reports on incidents of self-defense with a firearm in the home, focusing on the same types of incidents as the NRA stories and covering the same time period.<sup>15</sup>

<sup>15</sup> This analysis was initially conducted to research issues regarding self-defense in the home, which was a focus of federal Second Amendment jurisprudence before the 2022 *New York State Rifle & Pistol Association v. Bruen* Supreme Court decision. 142 S. Ct. 2111 (June 23, 2022). The analysis of the

1           16. To identify relevant news stories to include in our analysis, we  
 2 performed a comprehensive search of published news stories using Factiva, an  
 3 online news reporting service and archive owned by Dow Jones, Inc. that  
 4 aggregates news content from nearly 33,000 sources.<sup>16</sup> The search was designed  
 5 to return stories about the types of incidents that are the focus of the NRA Armed  
 6 Citizen database and that Plaintiffs claim the Washington State law impedes—in  
 7 particular, the use of firearms for self-defense.<sup>17</sup> The search identified all stories  
 8 that contained the following keywords in the headline or lead paragraph: one or  
 9 more words from “gun,” “shot,” “shoot,” “fire,” or “arm” (including variations  
 10 on these keywords, such as “shooting” or “armed”), plus one or more words from

11  
 12 \_\_\_\_\_  
 13 NRA Armed Citizen incidents described above indicates that the number of shots  
 14 fired in self-defense outside the home is similar to those inside the home.

15           <sup>16</sup> Factiva is often used for academic research. For example, a search for  
 16 the term “Factiva” on Google Scholar yields over 28,000 results. As another  
 17 example, a search on Westlaw yields at least 83 expert reports that conducted  
 18 news searches using Factiva.

19           <sup>17</sup> NRA Institute for Legislative Action, Armed Citizens,  
<https://www.nraila.org/gun-laws/armed-citizen/>, accessed May 28, 2017; *See*  
 also, Motion, pp. 14-15.

1 “broke in,” “break in,” “broken into,” “breaking into,” “burglar,” “intruder,” or  
 2 “invader” (including variations on these keywords) and one or more words from  
 3 “home,” “apartment,” or “property” (including variations on these keywords).<sup>18</sup>  
 4 The search criteria matched approximately 90% of the NRA stories on self-  
 5 defense with a firearm in the home, and an analysis of the 10% of stories that are  
 6 not returned by the search shows that the typical number of shots fired in these  
 7 incidents was no different than in other incidents. The search covered the same  
 8 period used in our analysis of incidents in the NRA Armed Citizen database  
 9 (January 2011 to May 2017). The region for the Factiva search was set to “United  
 10 States.” The search returned approximately 35,000 stories for the period January  
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14 <sup>18</sup> The precise search string used was: (gun\* or shot\* or shoot\* or fire\* or  
 15 arm\*) and (“broke in” or “break in” or “broken into” or “breaking into” or  
 16 burglar\* or intrud\* or inva\*) and (home\* or “apartment” or “property”). An  
 17 asterisk denotes a wildcard, meaning the search includes words which have any  
 18 letters in place of the asterisk. For example, a search for shoot\* would return  
 19 results including “shoots,” “shooter” and “shooting.” The search excluded  
 duplicate stories classified as “similar” on Factiva.

1 2011 to May 2017.<sup>19</sup>

2 17. Using a random number generator, a random sample of 200 stories  
3 was selected for each calendar year, yielding 1,400 stories in total.<sup>20</sup> These 1,400  
4 stories were reviewed by me and my team at NERA to identify those stories that  
5 were relevant to the analysis, *i.e.*, incidents of self-defense with a firearm in or  
6 near the home. This methodology yielded a random selection of 200 news stories  
7 describing incidents of self-defense with a firearm in the home out of a population  
8 of approximately 4,800 relevant stories.<sup>21</sup> Thus, out of the over 70 million news  
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10 <sup>19</sup> The effect of using alternative keywords was considered. For example,  
11 removing the second category (“broke in” or “break in” or “broken into” or  
12 “breaking into” or burglar\* or intrud\* or inva\*) and including incidents in which  
13 the assailant was already inside the home and/or was known to the victim was  
14 considered. *A priori*, there was no reason to believe that a larger number of shots  
15 would be used in these incidents and based on an analysis of the NRA stories we  
16 found that the number of shots fired in incidents when defending against someone  
17 already in the home was not different than those with an intruder.

18 <sup>20</sup> The random numbers were generated by sampling with replacement.

19 <sup>21</sup> The approximately 4,800 relevant news stories were estimated by  
calculating the proportion of relevant news stories from the 200 randomly

1 stories aggregated by Factiva between January 2011 and May 2017,  
2 approximately 4,800 news stories were on incidents of self-defense with a firearm  
3 in the home. We analyzed a random selection of 200 of these stories.

4 18. For each news story, the city/county, state and number of shots fired  
5 were tabulated. When tabulating the number of shots fired, we used the same  
6 methodology as we used to analyze stories in the NRA Armed Citizen database.<sup>22</sup>

7  
8  
9 selected stories each year and applying that proportion to the number of results  
10 returned by the search for each year of the analysis. For example, in 2017, 33 out  
11 of 200 (17%) randomly selected news stories involved incidents of self-defense  
12 with a firearm in the home. Applying that proportion to the 1,595 results from  
13 the Factiva search in 2017 yields 263 relevant news stories in 2017. This process  
14 was repeated every year to arrive at a total of 4,841 relevant news stories from  
2011–2017.

15 <sup>22</sup> When the exact number of shots fired was not specified, we used the  
16 average for the most relevant incidents with known number of shots. For  
17 example, if the story stated that “shots were fired” this would indicate that at least  
18 two shots were fired and thus we used the average number of shots fired in all  
19 incidents in which two or more shots were fired and the number of shots was  
specified.



1 We then identified other stories describing the same incident on Factiva based on  
2 the date, location and other identifying information, and recorded the number of  
3 times that each incident was covered by Factiva news stories.

4 19. To determine the average number of shots fired per *incident*, we first  
5 determined the average number of shots fired per *story* and then analyzed the  
6 number of stories per incident. According to our study of a random selection from  
7 approximately 4,800 relevant stories on Factiva describing incidents of self-  
8 defense with a firearm in the home, the average number of shots fired per story  
9 was 2.61. This is not a measure of the average shots fired *per incident*, however,  
10 because the number of stories covering an incident varies, and the variation is not  
11 independent of the number of shots fired. We found that there was a statistically  
12 significant relationship between the number of shots fired in an incident and the  
13 number of news stories covering the incident.<sup>23</sup> We found that on average the

14 \_\_\_\_\_  
15 <sup>23</sup> Based on a linear regression of the number of news stories as a function  
16 of the number of shots fired, the results were statistically significant at the 1%  
17 level (more stringent than the 5% level commonly used by academics and  
18 accepted by courts. *See*, for example, Freedman, David A., and David H. Kaye,  
19 “Reference Guide on Statistics,” *Reference Manual on Scientific Evidence*  
(Washington, D.C.: The National Academies Press, 3rd ed., 2011), pp. 211-302,

1 more shots fired in a defensive gun use incident, the greater the number of stories  
2 covering the incident. For example, as shown in the table below, we found that  
3 incidents in Factiva news stories with zero shots fired were covered on average  
4 by 1.8 news stories, while incidents with six or more shots fired were covered on  
5 average by 10.4 different news stories.

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18 and Fisher, Franklin M., “Multiple Regression in Legal Proceedings,” 80  
19 *Columbia Law Review* 702 (1980).)

**Average Number of News Stories by Number of Shots Fired  
In Factiva Stories on Incidents of Self-Defense with a Firearm  
January 2011 - May 2017**

<b>Number of Shots Fired By Defender</b>	<b>Average Number of News Stories</b>
0	1.8
1 to 2	2.8
3 to 5	3.8
6 or more	10.4

**Notes and Sources:**

Based on stories describing defensive gun use in a random selection of Factiva stories between 2011 to May 2017 using the search string: (gun\* or shot\* or shoot\* or fire\* or arm\*) and ("broke in" or "break in" or "broken into" or "breaking into" or burglar\* or intrud\* or inva\*) and (home\* or "apartment" or "property"), with region set to "United States" and excluding duplicate stories classified as "similar" on Factiva. Methodology for tabulation of shots fired as per footnote 22.

20. After adjusting for this disparity in news coverage, we find that the average number of shots fired per incident covered is 2.34.<sup>24</sup> Note that this

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<sup>24</sup> The adjustment reflects the probability that a news story on a particular incident would be selected at random from the total population of news stories

adjustment does not take into account the fact that some defensive gun use incidents may not be picked up by *any* news story. Given the observed relationship that there are more news stories when there are more shots fired, one would expect that the incidents that are not written about would on average have fewer shots than those with news stories. Therefore, the expectation is that these results, even after the adjustment, are biased upward (*i.e.*, estimating too high an average number of shots and underestimating the percent of incidents in which no shots were fired).

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on incidents of self-defense with a firearm in the home. The formula used for the adjustment is:

$$\frac{\sum_{i=1}^n \left( \text{Shots Fired}_i \times \frac{R_i}{C_i} \right)}{\sum_{i=1}^n \left( \frac{R_i}{C_i} \right)}$$

where:

$n$  = random selection of news stories on incidents of self-defense with a firearm in the home

$R_i$  = number of search results on Factiva in the calendar year of incident  $i$

$C_i$  = number of news stories covering incident  $i$

21. As shown in the table below, according to the study of Factiva news stories, in 11.6% of incidents the defender did not fire any shots, and simply threatened the offender with a gun. In 97.3% of incidents the defender fired five or fewer shots. There were no incidents where the defender was reported to have fired more than 10 bullets.

**Number of Shots Fired in Self-Defense in the Home  
Based on Random Selection of Articles from Factiva  
January 2011 - May 2017**

	<u>Incidents in the Home</u>
Estimated population of news reports in Factiva on self-defense with a firearm in the home	4,841
Random selection of news reports	200
Average Number of Shots Fired	2.34
Median Number of Shots Fired	2.03
Number of Incidents with No Shots Fired	23
Percent of Incidents with No Shots Fired	11.6%
Number of Incidents with <=5 Shots Fired	195
Percent of Incidents with <=5 Shots Fired	97.3%
Number of Incidents with >10 Shots Fired	0
Percent of Incidents with >10 Shots Fired	0.0%

**Notes and Sources:**

Based on news stories describing defensive gun use in a random selection of Factiva stories 2011 to May 2017 using search string (gun\* or shot\* or shoot\* or fire\* or arm\*) and ("broke in" or "break in" or "broken into" or "breaking into" or burglar\* or intrud\* or inva\*) and (home\* or "apartment" or "property") with region set to United States and excluding duplicate stories classified as "similar."

Calculated using weights reflecting the probability that a news story on a particular incident would be selected at random from the total population of news stories on incidents of self-defense with a firearm in the home.

22. In sum, an analysis of incidents in the NRA Armed Citizen database, as well as our own study of a random sample from approximately 4,800 news stories describing incidents of self-defense with a firearm, indicates that it is extremely rare for a person, when using a firearm in self-defense, to fire more than 10 rounds. In particular, I have analyzed almost 1,000 incidents of self-defense (736 incidents from the NRA Armed Citizen database and 200 stories from Factiva) and in only 2 incidents were more than 10 rounds used.<sup>25</sup>

**2. Percent of incidents in which rifles were used in self-defense according to the Heritage Defensive Gun Uses Database**

23. I have been asked to analyze The Heritage Foundation’s “Defensive Gun Uses in the U.S.” database (“Heritage DGU Database”), a database of defensive gun incidents that was first published after my research on the number

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<sup>25</sup> As discussed above, the two incidents with more than 10 shots fired were added to the NRA Armed Citizen database after an earlier analysis that I had conducted of the database in a different case. Moreover, according to the news stories on these two incidents, the defenders did not appear to need to fire more than 10 shots to defend themselves.

1 of rounds used by individuals in self-defense was performed.<sup>26</sup> In particular, I  
 2 have been asked to analyze the percent of incidents in which rifles were used in  
 3 self-defense according to the Heritage DGU Database. The analysis of the  
 4 Heritage DGU Database indicates that it is rare for a rifle to be used in self-  
 5 defense.

6 24. The Heritage Foundation is a think tank focused on “formulat[ing]  
 7 and promot[ing] public policies based on the principles of free enterprise, limited  
 8 government, individual freedom, traditional American values, and a strong  
 9 national defense.”<sup>27</sup> According to The Heritage Foundation, “[t]he right of the  
 10 people to keep and bear arms is a fundamental part of American liberty, serving  
 11 as an important individual defense against crime and a collective defense against  
 12 tyranny.”<sup>28</sup>

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14 <sup>26</sup> “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*, as of  
 15 October 7, 2022, [https://datavisualizations.heritage.org/firearms/defensive-gun-](https://datavisualizations.heritage.org/firearms/defensive-gun-uses-in-the-us)  
 16 [uses-in-the-us](https://datavisualizations.heritage.org/firearms/defensive-gun-uses-in-the-us).

17 <sup>27</sup> “About Heritage,” *The Heritage Foundation*,  
<https://www.heritage.org/about-heritage/mission>.

18 <sup>28</sup> “Firearms,” *The Heritage Foundation*,  
 19 <https://www.heritage.org/firearms>.

1           25. In April 2020, The Heritage Foundation began publishing and  
 2 periodically updating a database of news stories describing incidents in the U.S.  
 3 in which individuals purportedly defended themselves using firearms.<sup>29</sup> The  
 4 Heritage Foundation notes that its database is not comprehensive but meant to  
 5 “highlight” stories of successful self-defense.<sup>30,31</sup> As a result, one would expect  
 6 the Heritage DGU Database to be more likely to identify successful uses of rifles  
 7 in self-defense than a randomized review of news stories.

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13           <sup>29</sup> “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*.

14           <sup>30</sup> “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*.

15           <sup>31</sup> Note that a review of the news stories cited in the database indicates that  
 16 a number of the incidents may not involve individuals defending themselves. For  
 17 example, in one incident (“Two Burglary Suspects Caught By Victim’s Brother  
 18 And Friend, Held At Gunpoint For Police,” *5NewsOnline*, February 11, 2019), a  
 19 homeowner’s brother and friend appear to have found and apprehended burglars  
 on the roadside.



1           26. As of October 7, 2022, the Heritage DGU Database included 2,714  
2 incidents from January 1, 2019 through October 6, 2022.<sup>32</sup> The Heritage DGU  
3 Database codes the following information for each incident:<sup>33</sup>

- 4           • Date of the incident;
- 5           • Website link to the news story;
- 6           • Location (city and state);
- 7           • Context (e.g., domestic violence, home invasion, robbery, etc.);
- 8           • Whether the defender had a concealed-carry permit;
- 9           • Whether there were multiple assailants;
- 10          • Whether shots were fired; and
- 11          • Firearm type (handgun, shotgun, rifle, pellet rifle, long gun, or  
12          unknown).<sup>34</sup>

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15           <sup>32</sup> “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*.

16           <sup>33</sup> “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*.

17           <sup>34</sup> A review of the data and linked news stories from the Heritage DGU  
18 Database indicates that the firearm type corresponds to the firearm associated  
19 with the defender.

27. I performed an analysis of all 2,714 incidents in the Heritage DGU Database as of October 7, 2022 to determine what number and percent of the incidents involved a rifle. I found there were 51 incidents indicating a rifle was involved. These 51 incidents represent 2% of all incidents in the database and 4% of incidents with a known gun type.<sup>35</sup> The following table shows the breakdown of incidents by coded firearm type for the 2,714 incidents.

**The Heritage Foundation  
Defensive Gun Uses Database**

<b>Firearm Type</b>	<b>Incidents<sup>1</sup></b>	<b>% of Total</b>	<b>% of Known</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
Handgun	1,113	41%	90%
Shotgun	78	3%	6%
<b>Rifle</b>	<b>51</b>	<b>2%</b>	<b>4%</b>
Long Gun	1	0%	0%
Pellet Rifle	1	0%	0%
Unknown	1,473	54%	
<b>Total known:</b>	<b>1,241</b>		
<b>Total:</b>	<b>2,714</b>		

**Source:**

"Defensive Gun Uses in the U.S.," *The Heritage Foundation*.  
Data as of October 7, 2022.

<sup>1</sup> Note that three incidents are coded as having more than one firearm type and thus the sum by firearm type is larger than the total number of incidents.

28. I conducted the same analysis of the Heritage DGU Database excluding incidents that occurred in states that had restrictions on assault weapons in 2022. In particular, I excluded incidents in California, Connecticut, Hawaii, Maryland, Massachusetts, New Jersey, and New York, as well as Washington D.C.<sup>36</sup> In states without assault weapons restrictions, the Heritage DGU Database has 48 incidents indicating a rifle was involved. These 48 incidents represent 2% of incidents in these states and 4% of incidents with a known gun type in these states. The following table shows the breakdown of incidents by coded firearm type for states that do not restrict assault weapons.

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<sup>35</sup> This analysis is based on The Heritage Foundation's coding of these incidents. We have not independently verified the coding of these incidents.

<sup>36</sup> See "Assault Weapons," *Giffords Law Center*, <https://giffords.org/lawcenter/gun-laws/policy-areas/hardware-ammunition/assault-weapons/>. Delaware is not excluded since restrictions in Delaware were enacted in June 2022. See "Governor Carney Signs Package of Gun Safety Legislation," *Delaware.gov*, June 30, 2022, <https://news.delaware.gov/2022/06/30/governor-carney-signs-package-of-gun-safety-legislation/>.

**The Heritage Foundation  
Defensive Gun Uses Database  
States Without Assault Weapon Restrictions**

<b>Firearm Type</b>	<b>Incidents<sup>1</sup></b>	<b>% of Total</b>	<b>% of Known</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
Handgun	1,033	41%	90%
Shotgun	63	3%	6%
Rifle	48	2%	4%
Long Gun	0	0%	0%
Pellet Rifle	1	0%	0%
Unknown	1,357	54%	
<b>Total known:</b>	<b>1,142</b>		
<b>Total:</b>	<b>2,499</b>		

**Source:**

"Defensive Gun Uses in the U.S.," *The Heritage Foundation*.  
Data as of October 7, 2022. Excludes the following states  
with assault weapon restrictions: California, Connecticut,  
Hawaii, Maryland, Massachusetts, New Jersey, and New York  
as well as Washington D.C. Classification from Giffords  
Law Center. Incidents in Delaware not excluded as  
restrictions were enacted in June 2022.

<sup>1</sup> Note that three incidents are coded as having more than one  
firearm type and thus the sum of the individual firearm  
types is larger than the total number of incidents.

**B. Public Mass Shootings**

29. We analyzed the use of assault weapons<sup>37</sup> and large-capacity magazines (magazines capable of holding more than 10 rounds) in public mass shootings using four sources for identifying public mass shootings: Mother Jones,<sup>38</sup> the Citizens Crime Commission of New York City,<sup>39</sup> The Washington

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<sup>37</sup> My analysis is based on the definition of assault weapons (“Assault Weapons”) provided by California law, specifically: California Penal Code sections 30510 and 30515, and California Code of Regulations, title 11, section 5499. California law defines Assault Weapons based on either their “make and model” or on certain “features.” *See*, for example, California Department of Justice: “What is considered an assault weapon under California law?” and “What are AK and AR-15 series weapons?” <https://oag.ca.gov/firearms/regagunfaqs>, accessed October 25, 2018.

<sup>38</sup> US Mass Shootings, 1982-2022: Data From Mother Jones’ Investigation,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/12/mass-shootings-mother-jones-full-data>.

<sup>39</sup> “Mayhem Multiplied: Mass Shooters and Assault Weapons,” Citizens Crime Commission of New York City, February 2018 update <http://www.nycrimecommission.org/pdfs/CCC-MayhemMultiplied->

1 Post,<sup>40</sup> and The Violence Project.<sup>41, 42</sup> The analysis focused on public mass  
 2 shootings because it is my understanding that the State of Washington is

3  
 4 [Feb2018.pdf](#). Additional details on the mass shootings were obtained from an  
 5 earlier source by the Citizens Crime Commission. “Mass Shooting Incidents in  
 6 America (1984-2012),” Citizens Crime Commission of New York City,  
 7 <http://www.nycrimecommission.org/mass-shooting-incidents-america.php>,  
 8 accessed June 1, 2017.

9 <sup>40</sup> “The terrible numbers that grow with each mass shooting,” The  
 10 Washington Post, updated May 12, 2021.  
 11 [https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-](https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/?utm_term=.5baebfd720ca)  
 12 [america/?utm\\_term=.5baebfd720ca](https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/?utm_term=.5baebfd720ca).

13 <sup>41</sup> “Mass Shooter Database,” The Violence Project,  
 14 <https://www.theviolenceproject.org/mass-shooter-database/>, updated May 14,  
 15 2022.

16 <sup>42</sup> When I began research in 2013 on mass shootings, I found Mother Jones  
 17 and Citizens Crime Commission to maintain the most comprehensive lists of  
 18 relevant mass shootings. More recently, two additional sources, The Washington  
 19 Post and The Violence Project, have compiled lists of public mass shootings. The  
 Violence Project began work on its mass shootings database in September 2017  
 and its database first went online in November 2019, while The Washington Post

1 concerned about public mass shootings and enacted the challenged law, in part,  
2 to address the problem of public mass shootings.<sup>43</sup>

3 30. The type of incident considered a mass shooting is generally  
4 consistent across the four sources: all four sources consider an event a mass  
5 shooting if four or more people were killed in a public place in one incident,  
6 excluding incidents involving other criminal activity such as a robbery.<sup>44</sup>

7  
8  
9 first published its mass shootings database on February 14, 2018. There is  
10 substantial overlap between the mass shootings in all four sources. For example,  
11 the Mother Jones data contains 93% of the mass shootings in the Citizens Crime  
12 Commission data for the years covered by both data sources, 1984 to 2016, while  
13 The Washington Post contains 94% of the mass shootings in The Violence  
14 Project data for the years covered by both data sources, 1966 to 2019.

14 <sup>43</sup> See, for example, 2023 Wash. Sess. Laws, ch. 162, § 1.

15 <sup>44</sup> Citizen Crime Commission describes a mass shooting as “four or more  
16 victims killed” in “a public place” that were “unrelated to another crime (e.g.,  
17 robbery, domestic violence).” Citizen Crime Commission notes that its sources  
18 include “news reports and lists created by government entities and advocacy  
19 groups.” “Mayhem Multiplied: Mass Shooters and Assault Weapons,” Citizens  
Crime Commission of New York City, February 2018 update.

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Mother Jones describes mass shootings as “indiscriminate rampages in public places resulting in four or more victims killed by the attacker,” excluding “shootings stemming from more conventionally motivated crimes such as armed robbery or gang violence.” Although in January 2013 Mother Jones changed its definition of mass shooting to include instances when three or more people were killed, for this declaration we only analyzed mass shootings where four or more were killed to be consistent with the definition of the other three sources. “A Guide to Mass Shootings in America,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/07/mass-shootings-map>. See also “What Exactly is a Mass Shooting,” Mother Jones, August 24, 2012. <http://www.motherjones.com/mojo/2012/08/what-is-a-mass-shooting>.

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The Washington Post describes a mass shooting as “four or more people were killed, usually by a lone shooter” excluding “shootings tied to robberies that went awry” and “domestic shootings that took place exclusively in private homes.” The Washington Post notes that its sources include “Grant Duwe, author of ‘Mass Murder in the United States: A History,’ Mother Jones and Washington Post research,” as well as “Violence Policy Center, Gun Violence Archive; FBI 2014 Study of Active Shooter Incidents; published reports.” “The terrible numbers that grow with each mass shooting,” The Washington Post, updated



1           31. Each of the four sources contains data on mass shootings covering

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4           May 12, 2021, <https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/>.

5           The Violence Project indicates that it uses the Congressional Research  
6 Service definition of a mass shooting: “a multiple homicide incident in which  
7 four or more victims are murdered with firearms—not including the  
8 offender(s)—within one event, and at least some of the murders occurred in a  
9 public location or locations in close geographical proximity (e.g., a workplace,  
10 school, restaurant, or other public settings), and the murders are not attributable  
11 to any other underlying criminal activity or commonplace circumstance (armed  
12 robbery, criminal competition, insurance fraud, argument, or romantic triangle).”  
13 The Violence Project notes that its sources include “Primary Sources: Written  
14 journals / manifestos / suicide notes etc., Social media and blog posts, Audio and  
15 video recordings, Interview transcripts, Personal correspondence with  
16 perpetrators” as well as “Secondary Sources (all publicly available): Media  
17 (television, newspapers, magazines), Documentary films, Biographies,  
18 Monographs, Peer-reviewed journal articles, Court transcripts, Law Enforcement  
19 records, Medical records, School records, Autopsy reports.” “Mass Shooter  
Database,” The Violence Project, <https://www.theviolenceproject.org/methodology/>, accessed January 17, 2020.

1 different time periods. The Mother Jones data covers 112 mass shootings from  
 2 1982 to October 13, 2022,<sup>45</sup> the Citizens Crime Commission data covers 80 mass  
 3 shootings from 1984 to February 2018,<sup>46</sup> The Washington Post data covers 185  
 4 mass shootings from 1966 to May 12, 2021,<sup>47</sup> and The Violence Project data  
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 11 <sup>45</sup> “A Guide to Mass Shootings in America,” Mother Jones, updated  
 12 November 23, 2022, [http://www.motherjones.com/politics/2012/07/mass-](http://www.motherjones.com/politics/2012/07/mass-shootings-map)  
 13 [shootings-map](http://www.motherjones.com/politics/2012/07/mass-shootings-map). Excludes mass shootings where only three people were killed.  
 14 Note this analysis of the Mother Jones data may not match other analyses because  
 15 Mother Jones periodically updates its historical data.

16 <sup>46</sup> “Mayhem Multiplied: Mass Shooters and Assault Weapons,” *Citizens*  
 17 *Crime Commission of New York City*, February 2018 update.

18 <sup>47</sup> “The terrible numbers that grow with each mass shooting,” *The*  
 19 *Washington Post*, updated May 12, 2021,  
[https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-](https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/)  
[america/](https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/).

1 covers 182 mass shootings from 1966 to May 14, 2022.<sup>48, 49</sup>

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4 <sup>48</sup> “Mass Shooter Database,” *The Violence Project*  
5 <https://www.theviolenceproject.org/mass-shooter-database/>, updated May 14,  
6 2022.

7 <sup>49</sup> Note that I have updated this mass shooting analysis to include more  
8 recent incidents, as well as more recently available details. In my 2017  
9 declaration in *Duncan v. Bonta*, I included data on mass shootings through April  
10 2017. In my 2018 declaration in *Rupp v. Becerra*, I updated the analysis to  
11 include data on mass shootings through September 2018. The analyses in both of  
12 these declarations included mass shootings only from Mother Jones and the  
13 Citizen Crime Commission. In my 2020 declaration in *Miller v. Becerra*, I  
14 updated the analysis to include mass shootings through December 2019 and  
15 added mass shootings from two more sources, The Washington Post and the  
16 Violence Project. The number of mass shootings, as well as some details about  
17 the shootings, are not identical across these declarations for three main reasons.  
18 First, I have updated the analysis to include more recent incidents as well as more  
19 recently available details. Second, starting in 2020, I added two more sources  
(The Washington Post and Violence Project), which include additional mass  
shootings and details not included in the initial sources. Third, even though  
Mother Jones included instances when three or more people were killed, for my

32. Note that the two more recently compiled sources of mass shootings, The Washington Post and The Violence Project, include additional mass shootings that were not covered by either Mother Jones or Citizens Crime Commission. In general, we found that these additional mass shootings were less covered by the media and involved fewer fatalities and/or injuries than the ones previously identified by Mother Jones or Citizens Crime Commission. For example, using the mass shooting data for the period 1982 through 2019, we found that the median number of news stories for a mass shooting included in Mother Jones and/or Citizen Crime Commission was 317, while the median for the additional mass shootings identified in The Washington Post and/or The Violence Project was 28.<sup>50</sup> In addition, using the mass shooting data through 2019, we found an average of 21 fatalities or injuries for a mass shooting included in Mother Jones and/or Citizen Crime Commission, while only 6 fatalities or \_\_\_\_\_

declarations and reports starting in 2020, I only included mass shootings where four or more were killed to be consistent with the definition of the other three sources.

<sup>50</sup> The search was conducted over all published news stories on Factiva. The search was based on the shooter's name and the location of the incident over the period from one week prior to three months following each mass shooting.

1 injuries for the additional mass shootings identified in The Washington Post  
2 and/or The Violence Project.

3 33. We combined the data from the four sources for the period 1982  
4 through October 2022, and searched news stories on each mass shooting to obtain  
5 additional details on the types of weapons used and data on shots fired where  
6 available. We compared the details on the weapons used in each shooting to the  
7 list of prohibited firearms and features specified in California law to identify,  
8 based on this publicly available information, which mass shootings involved the  
9 use of Assault Weapons. In addition, we identified, based on this publicly  
10 available information, which mass shootings involved the use of large-capacity  
11 magazines. See attached Exhibit B for a summary of the combined data, and  
12 Exhibit C for a summary of the weapons used in each public mass shooting based  
13 on Mother Jones, Citizens Crime Commission, The Washington Post, The  
14 Violence Project, and news reports.<sup>51</sup>

15 **1. The use of Assault Weapons in public mass shootings**

16 34. Based on the 179 mass shootings through October 2022, we found  
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18 <sup>51</sup> Note that the Citizens Crime Commission data was last updated in  
19 February 2018 and The Washington Post was last updated in May 2021.

1 that Assault Weapons are often used in public mass shootings. Whether an  
2 Assault Weapon was used in a mass shooting can be determined in 153 out of the  
3 179 incidents (85%) considered in this analysis. Out of these 153 mass shootings,  
4 36 (or 24%) involved Assault Weapons. Even assuming the mass shootings  
5 where it is not known whether an Assault Weapon was used *all* did not involve  
6 an Assault Weapon, 36 out of 179 mass shootings, or 20%, involved Assault  
7 Weapons.

8 **2. The use of large-capacity magazines in public mass shootings**

9 35. Based on the 179 mass shootings through October 2022, we found  
10 that large-capacity magazines (those with a capacity to hold more than 10 rounds  
11 of ammunition) are often used in public mass shootings. Magazine capacity is  
12 known in 115 out of the 179 mass shootings (or 64%) considered in this analysis.  
13 Out of the 115 mass shootings with known magazine capacity, 73 (or 63%)  
14 involved large-capacity magazines. Even assuming the mass shootings with  
15 unknown magazine capacity *all* did not involve large-capacity magazines, 73 out  
16  
17  
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1 of 179 mass shootings or 41% of mass shootings involved large-capacity  
2 magazines.

3 **3. Casualties in mass shootings involving Assault Weapons or**  
4 **large-capacity magazines**

5 36. Based on our analysis, casualties were higher in the mass shootings  
6 that involved Assault Weapons than in other mass shootings. In particular, we  
7 found an average number of fatalities or injuries of 36 per mass shooting with an  
8 Assault Weapon versus 10 for those without. Focusing on just fatalities, we found  
9 an average number of fatalities of 12 per mass shooting with an Assault Weapon  
10 versus 6 for those without.

11 37. Based on our analysis, casualties were higher in the mass shootings  
12 that involved weapons with large-capacity magazines than in other mass  
13 shootings. In particular, we found that the average number of fatalities or injuries  
14 per mass shooting with a large-capacity magazine was 25 versus 9 for mass  
15 shootings where a large-capacity magazine was not used. Focusing on just  
16 fatalities, we found that the average number of fatalities per mass shooting with  
17 a large-capacity magazine was 10 versus 6 for those without.

18 38. In addition, we found that casualties were higher in the mass  
19 shootings that involved both Assault Weapons *and* large-capacity magazines. In

1 particular, we found an average number of fatalities or injuries of 40 per mass  
2 shooting with both an Assault Weapon and a large-capacity magazine versus 8  
3 for those without either. Focusing on just fatalities, we found an average number  
4 of fatalities of 13 per mass shooting with both an Assault Weapon and a  
5 large-capacity magazine versus 6 for those without either. (See table on next  
6 page).



**Numbers of Fatalities and Injuries in Public Mass Shootings  
1982 - October 2022**

Weapon Used	# of Incidents	Average # of		
		Fatalities	Injuries	Total
Assault Weapon	36	12	24	36
No Assault Weapon	117	6	4	10
Unknown	26	5	3	9
Large-Cap. Mag.	73	10	16	25
No Large-Cap. Mag.	42	6	3	9
Unknown	64	5	3	7
Assault Weapon & Large-Cap. Mag.	31	13	27	40
Large-Cap. Mag. Only <sup>1</sup>	36	8	7	15
No Assault Weapon or Large-Cap. Mag. <sup>2</sup>	41	6	3	8
Unknown <sup>3</sup>	71	5	3	8

**Notes and Sources:**

Casualty figures exclude the shooter. Assault Weapon and large-capacity magazine classification and casualties updated based on review of stories from Factiva/Google searches.

<sup>1</sup> Shootings involving large-capacity magazine and no Assault Weapon.

<sup>2</sup> Shootings involving neither a large-capacity magazine nor Assault Weapon.

<sup>3</sup> Shootings where it is either unknown whether a large-capacity magazine was involved or unknown whether an Assault Weapon was involved.

39. Our results are consistent with those of other studies that have analyzed mass shootings. Note that although the other studies are based on alternate sets of mass shootings, including covering different years and defining mass shootings somewhat differently, the results are similar in finding that the number of fatalities and injuries is greater in mass shootings in which large-

1 capacity magazines and assault weapons are involved. A 2019 academic article  
2 published in the *American Journal of Public Health* by Klarevas, et al., found  
3 that “[a]ttacks involving LCMs resulted in a 62% higher mean average death  
4 toll.”<sup>52</sup> This study found an average number of fatalities of 11.8 per mass shooting  
5 with a large-capacity magazine versus 7.3 for those without. The results in this  
6 study were based on 69 mass shootings between 1990 and 2017.<sup>53</sup> An analysis of  
7 the mass shootings detailed in a 2016 article by Gary Kleck yielded similar  
8 results: 21 average fatalities or injuries in mass shootings involving large-  
9 capacity magazines versus 8 for those without.<sup>54</sup> The Kleck study covered 88  
10

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11 <sup>52</sup> Louis Klarevas, Andrew Conner, and David Hemenway, “The Effect of  
12 Large-Capacity Magazine Bans on High-Fatality Mass Shootings, 1990–2017,”  
13 *American Journal of Public Health* (2019).

14 <sup>53</sup> The Klarevas, et al. study defines mass shootings as “intentional crimes  
15 of gun violence with six or more victims shot to death, not including the  
16 perpetrators” and, unlike my analysis, does not exclude incidents in private places  
17 or incidents involving other criminal activity such as robbery.

18 <sup>54</sup> Kleck, Gary, “Large-Capacity Magazines and the Casualty Counts in  
19 Mass Shootings: The Plausibility of Linkages,” 17 *Justice Research and Policy*  
28 (2016).

1 mass shooting incidents between 1994 and 2013.<sup>55</sup> In a 2018 study, Koper, et al.  
2 found that mass shootings involving assault weapons and large-capacity  
3 magazines resulted in an average of 13.7 victims versus 5.2 for other cases.<sup>56</sup> The  
4 Koper, et al. study covered 145 mass shootings between 2009 and 2015.<sup>57</sup> The  
5 following table summarizes their results.

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11 <sup>55</sup> The Kleck study defines a mass shooting as “one in which more than six  
12 people were shot, either fatally or nonfatally, in a single incident.” *See* Kleck,  
13 Gary, “Large-Capacity Magazines and the Casualty Counts in Mass Shootings:  
The Plausibility of Linkages,” 17 *Justice Research and Policy* 28 (2016).

14 <sup>56</sup> Koper, et al., “Criminal Use of Assault Weapons and High-Capacity  
15 Semiautomatic Firearms: an Updated Examination of Local and National  
16 Sources,” *Journal of Urban Health* (2018).

17 <sup>57</sup> The Koper, et al. study defined mass shootings as “incidents in which  
18 four or more people were murdered with a firearm, not including the death of the  
19 shooter if applicable and irrespective of the number of additional victims shot but  
not killed.”

**Comparison of Studies on the Use of Large-Capacity Magazines in Mass Shootings**

Source	Criteria		Time Period	# of Incidents	Avg. # of Fatalities + Injuries / Fatalities	
	# Victims	Other Criteria			With LCM	Without LCM
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Allen (2023) <sup>1</sup>	at least 4	Includes shootings "in a public place in one incident, and exclude[s] incidents involving other criminal activity such as a robbery"	1982-October 2022	179	25 / 10	9 / 6
Allen (2020) <sup>2</sup>	<u>killed</u> <sup>3</sup>		1982-2019	161	27 / 10	9 / 6
Kleck et al. (2016) <sup>4</sup>	more than 6 <u>shot</u>	Excludes "spree shootings" and includes shootings in both "public" and "private" places	1994-2013	88	21 / n/a	8 / n/a
Klarevas et al. (2019) <sup>5</sup>	at least 6 <u>killed</u> <sup>3</sup>	Includes "intentional crimes of gun violence"	1990-2017	69	n/a / 12	n/a / 7
Koper et al. (2018) <sup>6</sup>	at least 4 <u>killed</u> <sup>3</sup>	Includes shootings in both public and private places	2009-2015	145	14 / n/a	5 / n/a

**Notes and Sources:**

<sup>1</sup> Exhibit B of this Declaration.

<sup>2</sup> Declaration of Lucy P. Allen in Support of Defendants' Opposition to Motion for Preliminary Injunction in *James Miller et al. v. Xavier Becerra et al.*, dated January 23, 2020.

<sup>3</sup> Excluding shooter.

<sup>4</sup> Kleck, Gary, "Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages," 17 Justice Research and Policy 28 (2016).

<sup>5</sup> Klarevas et al., "The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings 1990-2017," American Journal of Public Health (2019).

<sup>6</sup> Koper et al., "Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: an Updated Examination of Local and National Sources," Journal of Urban Health (2018). Note that the Koper et al study includes shootings involving both LCM and assault weapons.

#### 4. The number of rounds fired in public mass shootings with Assault Weapons or large-capacity magazines

40. The data on public mass shootings indicates that it is common for offenders to fire more than 10 rounds when using an Assault Weapon. Of the 36 mass shootings we analyzed through October 2022 that are known to have involved an Assault Weapon, there are 24 in which the number of shots fired is

1 known. Shooters fired more than ten rounds in *all* 24 incidents, and the average  
2 number of shots fired was 149.

3 41. In addition, the data indicates that it is common for offenders to fire  
4 more than 10 rounds when using a gun with a large-capacity magazine in mass  
5 shootings. Of the 73 mass shootings that are known to have involved a large-  
6 capacity magazine, there are 49 in which the number of shots fired is known.  
7 Shooters fired more than 10 rounds in 46 of the 49 incidents (or 94%), and the  
8 average number of shots fired was 99.

9 **5. The percent of mass shooters' guns legally obtained**

10 42. The data on public mass shootings indicates that the majority of  
11 guns used in these mass shootings were obtained legally.<sup>58</sup> Of the 179 mass  
12 shootings analyzed through October 2022, there are 112 where it can be  
13 determined whether the gun was obtained legally. According to the data, shooters  
14 in 79% of mass shootings obtained their guns legally (89 of the 112 mass  
15 shootings) and 80% of the guns used in these 112 mass shootings were obtained  
16 legally (202 of the 252 guns). (Even if one assumed that the guns were illegally  
17

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18 <sup>58</sup> The determination of whether guns were obtained legally is based on  
19 Mother Jones and The Washington Post reporting.

1 obtained in all of the mass shootings where this question of legality is unknown,  
2 then one would find that in 50% of the mass shootings the guns were obtained  
3 legally and that 62% of the guns themselves were obtained legally.)

4 I declare under penalty of perjury under the laws of the State of  
5 Washington that the foregoing is true and correct.

6  
7 DATED this 19th day of May, 2023 at New York, New York.

8   
9 \_\_\_\_\_  
LUCY P. ALLEN

**DECLARATION OF SERVICE**

I hereby declare that on this day I caused the foregoing document to be electronically filed with the Clerk of the Court using the Court's CM/ECF System which will serve a copy of this document upon all counsel of record.

DATED this 1st day of June, 2023, at Seattle, Washington.

/s/ Andrew R.W. Hughes

ANDREW R.W. HUGHES, WSBA #49515

Assistant Attorney General